

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau

10/510326

(43) International Publication Date  
23 October 2003 (23.10.2003)

PCT

(10) International Publication Number  
WO 03/088085 A1(51) International Patent Classification<sup>7</sup>: G06F 17/30,  
G06E 1/00, G06F 15/18Mathew [CA/US]; 1201 S. McClintock, Apt. 137, Tempe,  
AZ 85281 (US). CAPCO, David [US/US]; 933 E. Laguna  
Drive, Tempe, AZ 85282 (US). HU, Jiuxiang [CN/US];  
1224 E. Lemon Street #147, Tempe, AZ 85281 (US).  
MARKE, Mary [US/US]; 2052 E. Lomar Vista, Tempe,  
AZ 85282 (US).

(21) International Application Number: PCT/US03/10665

(74) Agent: ONYE, Richard, E.; Fennemore Craig, 3003  
North Central, Suite 2600, Phoenix, AZ 85012-2913 (US).

(22) International Filing Date: 4 April 2003 (04.04.2003)

(81) Designated States (national): CA, JP, US.  
(84) Designated States (regional): European patent (AT, BE,  
BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,  
IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

(25) Filing Language: English

## Declarations under Rule 4.17:

(26) Publication Language: English

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations CA, JP, European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR)
- of inventorship (Rule 4.17(iv)) for US only

(30) Priority Data:  
60/370,507 4 April 2002 (04.04.2002) US

## Published:

(71) Applicant (for all designated States except US): ARIZONA BOARD OF REGENTS [US/US]; Box 873511, Tempe, AZ 85287 (US).

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(72) Inventors; and  
(75) Inventors/Applicants (for US only): ANSHUMAN, Razdan [US/US]; 732 E. Hiddenview Drive, Phoenix, AZ 85048 (US). ROWE, Jeremy [US/US]; 2120 S. Las Palmas, Phoenix, AZ 85048 (US). COLLINS, Daniel [US/US]; 1417 Grandview Drive, Tempe, AZ 85281 (US). FARIN, Gerald [DE/US]; 4952 E. Mockingbird Lane, Paradise Valley, AZ 85201 (US). McCARTNEY, Peter [US/US]; 2571 W. Temple Street, Chandler, AZ 85224 (US). NIELSON, Gregory, M. [US/US]; 1348 W. Mountain View, Mesa, AZ (US). SIMON, Arleyn [US/US]; 1102 W. Cornell Drive, Tempe, AZ 85283 (US). HENDERSON, Mark, Richard [US/US]; 5382 W. Harrison Court, Chandler, AZ 85226 (US). TOCHERI,

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 03/088085 A1

(54) Title: THREE-DIMENSIONAL DIGITAL LIBRARY SYSTEM

(57) Abstract: A computer system (100) and method for the storage, archiving, query and retrieval of information relating to 3D objects is provided. The system includes data acquisition (130) means for requiring point coordinate data about a three-dimensional object, a database component (105), a processor (103) and a user interface (110). The processor (103) is operable to generate modeled data (105) from the point coordinate data and to segment the modeled data (124) into feature data (122) representing a plurality of features of the object (118). The data is organized so that features of the 3D objects can be automatically extracted for online query and retrieval. The processor (103) is operable to store the modeled data (124) and the feature data (122) in the database component (105) and retrieve modeled data (124) and feature data (122) from the database component (105) using search criteria representing object features of interest. The user interface (110) is operative with the processor (103) to allow a user input search criteria to processor (103) and to display data retrieved by the processor as a representation of an object feature.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/10665

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 17/30, G06E 1/00, G06F 15/18  
 US CL : 707/3;706/20; 382/190

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
 U.S. : 707/3;706/20; 382/190

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,640,468 A (HSU) 17 June 1997 (17.06.1997), Fig. 5-6, column 6-14.	1-25
Y	US 5,845,048 A (MASUMOTO) 1 December 1998 (1.12.1998), Fig. 9A-D, column 13-24.	1-25

Further documents are listed in the continuation of Box C.

See patent family annex.

• Special categories of cited documents:		
"A" document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

07 August 2003 (07.08.2003)

Date of mailing of the international search report

05 SEP 2003

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 Facsimile No. (703)305-3230

Authorized officer

Safet Metjahić

*Peggy Harrod*

Telephone No. 703-305-3900

INTERNATIONAL SEARCH REPORT

PCT/US03/10665

**Continuation of B. FIELDS SEARCHED Item 3:**  
East Search